Wayfinding 6

WAYFINDING

Wayfinding is understood to describe the process of decision making required of an individual to reach a destination. This process first requires that the individual be aware of their spatial environment—both their location within the setting, and the location of their destination within the setting. Second, it requires that the individual be able to determine a plan of action, or path of travel, from location to destination. Third, wayfinding requires that the individual constantly update and review their understanding of their progress, until the destination is reached.

Concept

Wayfinding is spatial problem solving, where the problem is finding one's way from Point A to Point B. In order for an individual to successfully solve the problem, adequate information must be available. This information may be gathered in any one of a number of ways. It may be acquired visually as when one merely sees one's destination. It may be learned through experience—repetition, or rote. It may also be communicated, graphically or verbally. We assume that all users will benefit eventually from experience if they visit a facility repeatedly. Further, we assume that, in all cases, the individual can ask for assistance. It is, therefore, the first-time user without benefit of assistance who is the main benefactor of a wayfinding solution.

The information needing to be conveyed to the individual has to do with spatial definition. Kevin Lynch, in *The Image of the City*[1], identifies five primary components which are critical to our understanding of an environment. These components are paths, landmarks, nodes, edges, and districts. Paths and landmarks are a part of our common vocabulary. Simply stated, nodes are the intersection of two or more paths, edges are the boundaries of districts, and districts are either architectural constructions such as floors, or organizational districts, such as departmental areas.

Paths and nodes are primarily defined by the plan of a building—its corridors and crossings. Landmarks may be an integral part of the architecture or decor, or may be added specifically to enhance wayfinding. Districts imposed on a building by its occupants are among the more fluid of the five primary components, but districts defined by floor plates are the most fixed. Edges follow district boundaries, and some will change over time.

In providing a comprehensive wayfinding solution, we seek to reinforce the five primary components of orientation through signage and material finish. Material finishes define districts and may help define paths. Signage supplements and complements the built components of wayfinding. Signs serve as landmarks, reinforce paths, inform nodes, and define district edges.

[1] Lynch, Kevin. The Image of the City. Cambridge, MA: MIT Press, 1960.

Summary

Our spatial comprehension of a complex or facility is enhanced by its architecture, material finishes, and wayfinding signage.

The architecture of the campuses and buildings surveyed as part of the Environment of Care Wayfinding Concept development is largely fixed, although issues such as definition and use of entries, and architectural embellishment can—and should—be addressed within the scope of defining a complete wayfinding solution. Our primary focus for enhancing wayfinding within these facilities is signage—although material finishes are addressed and further supplemented in the ECE Material Finishes Implementation Guide.

Common Problems

Overall, signage in these three hospitals is a mix of various systems with little uniformity in application, and little or no adherence to ADA standards. Wayfinding signage, specifically, suffers from the lack of a comprehensive solution, and from inconsistency among its various elements. There is some use of material finishes to aid in wayfinding—primarily color-coding by floor—but its implementation is limited, and the result is unconvincing.

All three hospitals are unique, yet they share common problems. Some of the concerns apparent in all three are as follows:

- Insufficient indication of the main entry to the compound.
- Inadequacy of orientation information at the entry to the compound.
- No identification of the hospital building's main entrance(s).
- Lack of orientation information at entry to the building(s).
- Limited directional information.
- Limited reinforcement of directional information.
- Inadequacy of existing signage for task.
- Lack of consistency in application.
- Inconsistent appearance.
- Inconsistent placement.
- Non-conformance with regulations and requirements.

A related issue, which adds to the confusion of the existing wayfinding systems, is the practice of numbering the buildings on a compound. While the numbering does have some benefit for locating the building within the compound, it is better suited to identifying the buildings as inventory, and does not aid wayfinding once one has entered into a building. The numbering system must not be confused with a wayfinding solution—although use of the numbers as building identifiers in certain applications is acceptable.

Common Solutions

Applying common solutions to the problems addressed above will not only ease wayfinding within the individual hospitals, but will also standardize elements that will ultimately help users who visit multiple hospitals.

The issues of locating the entry to a compound and orientation within the compound are beyond the scope of this project, but require attention as these subjects are addressed as part of other tasks. The solution within the context of ECE begins with identification of a building's main entry.

The main entry to a given hospital building is not the final destination in itself, but serves as a node along the path to the final destination. Therefore, *the main entry must be clearly identified*. The preferred solution to marking the exterior entry is architectural. It is difficult for any signage—short of neon—to make a statement as strong as that made by a prominent architectural indication of entry.

Information necessary for the second leg of the journey must be located at the transition from exterior to interior. Initial orientation and directional information should be provided immediately inside each main entry. This will be the first in a series of branching directional indicators. The extent of the information presented should be consistent with the frequency and nature of use. That at the primary entry should be comprehensive. Entries which are use-specific need not have information relating to anything beyond the immediate area—except perhaps for directions to a more-extensive listing. A kiosk—a freestanding signage element positioned to provide information for users approaching from several directions—is recommended for those areas which serve multiple entries.

Once initial orientation within the building has been accomplished, reinforcement by means of clear identification of pathways and intersections needs to be present. Directional signage is required—as a minimum—at all major intersections along a path. Existing landmarks should be highlighted, and where there are none, created. Districts—floors, departments, and individual rooms—should be differentiated through materials as well as signage, in keeping with the tenets of ECE Material Finishes Implementation Guide.

Destinations must be clearly and consistently marked. This means standardized signage should be placed in standardized locations throughout the facilities. This requirement for consistency is driven by regulation and utility. The Americans with Disabilities Act prescribes general instructions regarding positioning of all public signage. By maintaining a consistency in application, handicapped users have knowledge of what to expect that they would not otherwise. Similarly, for the able-sited, a unified application aids in establishing a visual coherence to the facility which benefits both comprehension and aesthetic appearance.

These solutions are general in nature and apply in different ways to all three hospitals, although each hospital complex has its own unique characteristics requiring unique solutions. Individual profiles of each hospital are outlined in the following sections. These are conceptual solutions only, but, in conjunction with the signage design document, are sufficient for development by a signage contractor into a final wayfinding solution.

HEIDELBERG

The US Army MEDDAC, Heidelberg, is located on Nachrichten Kaserne, on the south-central edge of Heidelberg. The caserne consists of approximately 30 buildings on a closed compound (Fig. 6). There are three separate hospital buildings—Building 3611, Building 3613, and Building 3617.

Building 3613 is the most prominent of the hospital buildings. It is a long, four-story stacking of double-loaded corridors, located on the east edge of the compound—paralleling Karlsruherstrasse (Fig. 1, 6). Building 3613 houses most of the base's major hospital functions, including emergency facilities, birthing, nursery, and surgical wards.

Fig. 1 Building 3613 Exterior

Fig. 2 Building 3611 Exterior

Building 3617 is commonly known as the Clinical Building. It is located to the west of, and facing, Building 3613 (Fig. 6), and is connected to it by an underground tunnel. Building 3617 houses the hospital's kitchen and dining facilities on the ground level, with clinical services located on the three levels above. The layout of Building 3617 is also a double-loaded corridor plan.

Building 3611 is one-half of a smaller, one-story building, and houses Family Member Services. It is located near the center of the caserne, west of Buildings 3617 and 3613 (Fig. 6). Building 3611 is the northern wing of an "H"-plan building, and is, again, a double-loaded corridor plan (Fig. 2).

Existing Wayfinding Conditions

Some of the shortfalls of the existing signage and wayfinding system currently utilized at Heidelberg become apparent upon entering through either of the two gates into the caserne. The compound's directional signage is small and sometimes hidden by vegetation. There is at least one sign which shows location of the various buildings on the compound, but which gives little indication as to the functions housed within each (Fig. 3). Determining which building to go to, if the building number is not known, is a matter of trial and error.

Fig. 3 Caserne Directory at East Gate

Additional confusion is created by the one-way street and parking organization within the caserne, which does not facilitate easy location of entries to the hospital buildings. (While street and parking layout is beyond the scope of ECE Phase II, it should be noted that solving these shortfalls would strengthen the overall wayfinding system proposed within this document.) The primary parking area, which serves all three buildings, is located north of Building 3617 (Fig. 6). Currently, there is no clear indication of direction from parking to the entry of any of the three buildings, and only secondary entries to Building 3617 are clearly visible from the majority of the parking lot.

There are five public entries along the west facade of Building 3613 which are visible from the east end of the parking lot. Four minor entries at ground level have prominent architectural canopies (Fig. 4). The fifth is the main entrance, and is raised on a plinth, yet is less visible and less architecturally distinct than the others (Fig. 5). Each of the four entries with canopies takes the user into a landing of a split-level stair tower that allows vertical movement through the building. The fifth enters directly onto the first floor entry hall and corridor via an exterior concrete stair and ramp.

Fig. 4 New Entrance Canopy at Secondary Entrances to Building 3611

Fig. 5 Primary Entrance at Building 3611

Building 3617 has four functioning public entries—one on each side (Fig. 6). Two of these lead directly to the same point—a central lobby, the others provide access to egress stairs at the ends of the stacked corridors. The doors on the north end of the building lead only to the stairs, as the clinic at that level is locked off to access from that entry.

The main entry to Building 3611 is fairly well defined, in part due to the smaller size and the function of the facility. Its location is central and the architecture of the building does a fair job of signaling its presence.

There is no comprehensive source of directional information covering all three facilities within any of the three buildings. Wayfinding information is spotty at best. Several different signage types are used among the three buildings as well, as within each individual building. Size, location, and placement of signage is not consistent, and sign color does not coordinate with existing materials or finishes.

Color is not used in wayfinding. The majority of the spaces are the same color, or very similar. Landmarks are few. Vertical circulation elements are pronounced, but like the floors, there is little that differentiates between them.

Recommendations

The primary parking areas (or avenues of approach therefrom) should each have a local, or focus, directory similar to Sign Type 1 (ST1) indicating direction to each of the three hospital buildings, and the major classes of functions contained in each (Fig. 6). This signage should indicate a single pathway to each building and not acknowledge multiple entries.

Building 3613 (Fig. 7) has, as mentioned previously, at least five options for entry expressed along the primary facade. Currently, the hierarchy of the entries is reversed due to the architectural prominence of the canopies at the secondary entries. Either the canopies should be removed[2], or the primary entry should be enhanced to restate its importance. The stairways inside each of the secondary entries are heavily used, as are the several elevators along the length of the building. As a result of this multiplicity of vertical pathways, there is no clear initial circulation node. There is, however, a main entry, which should be the location for a comprehensive listing of departments and destinations within the building (ST1).

Recognizing that the secondary entries do perform a vital role in distributing traffic, a local directory (ST2) should be provided within each entry, to guide the individual to the particular departments served from the stair, as well as to the main directory. The existing signage outside the stair, adjacent the sidewalk, should be removed. Each landing within the stair towers should be identified with floor and departments served by the stair at that level (ST2). All other signage should be oriented toward the two elevators on the east side of the building where more complete

[2] While the entries appear to be new, there does not seem to be any pressing need for their presence--they neither continue an existing covered walkway, nor serve as a transition for the handicapped--and they conflict with the intended pathway for the building. They could perhaps be relocated to other buildings where they would serve the dual purpose of canopy and entry indicator. Building 3611, with its recessed entry, would benefit greatly from such an installation.

floor information should be located (ST2). Areas that cannot be reached from a particular elevator should be indicated with a phrase such as "Take South Elevator."

Wards which are separated by doors from a traveled portion of the corridors should be identified (ST4), as should suites within the wards (ST5).

Building 3617 (Fig. 8) should be signed as a single entry building, with a single primary path. The primary entry is that on the east, facing Building 3613. The primary path is vertical via the main stair or the elevator. The door facing Building 3611, and that on the south, may be left operable as secondary entrances. The north door should be locked to entry and marked as an emergency exit only, since the interior corridor is closed to through traffic. A comprehensive listing of departments and destinations within the building (ST1) should be mounted opposite the elevator on the ground floor where it can be seen from the east entry vestibule. Floors should be identified immediately at the top of the all stairs (ST5 or ST6), and secondary directional signage should be located in the corridor opposite the elevator, and the entry to the floor from the main stair.

For Building 3611 (Fig. 9), directional information from the main parking area mentioned above will suffice until the door is reached, at which point a sign identifying the building and functions should be installed (ST1 or ST2). Once inside the main entry, directional information should be provided sufficient to guide the individual to either of the primary wings (ST2). From that point on, only departmental and room identification signage is necessary.

Buildings 3613 and 3617 should be color-coded (Flashbars ST8c may be employed immediately where material finishes are not yet scheduled to be updated) to assist users in differentiating between floors. It would also be beneficial if each were coded identically. Building 3611 is distinct enough that it could employ any one of the color options.

An electronic kiosk (ST1b) which allows interactive location of one's destination would be a beneficial addition to the elements indicated. Ideally, two units would be provided, one in the main entry of Building 3613, and the other in the main entry vestibule of Building 3617. Additional information on this type of device is provided in Chapter 5 - Signage.

Room signage should follow guidelines established in ECE Phase I, as outlined in Chapter 5 - Signage.

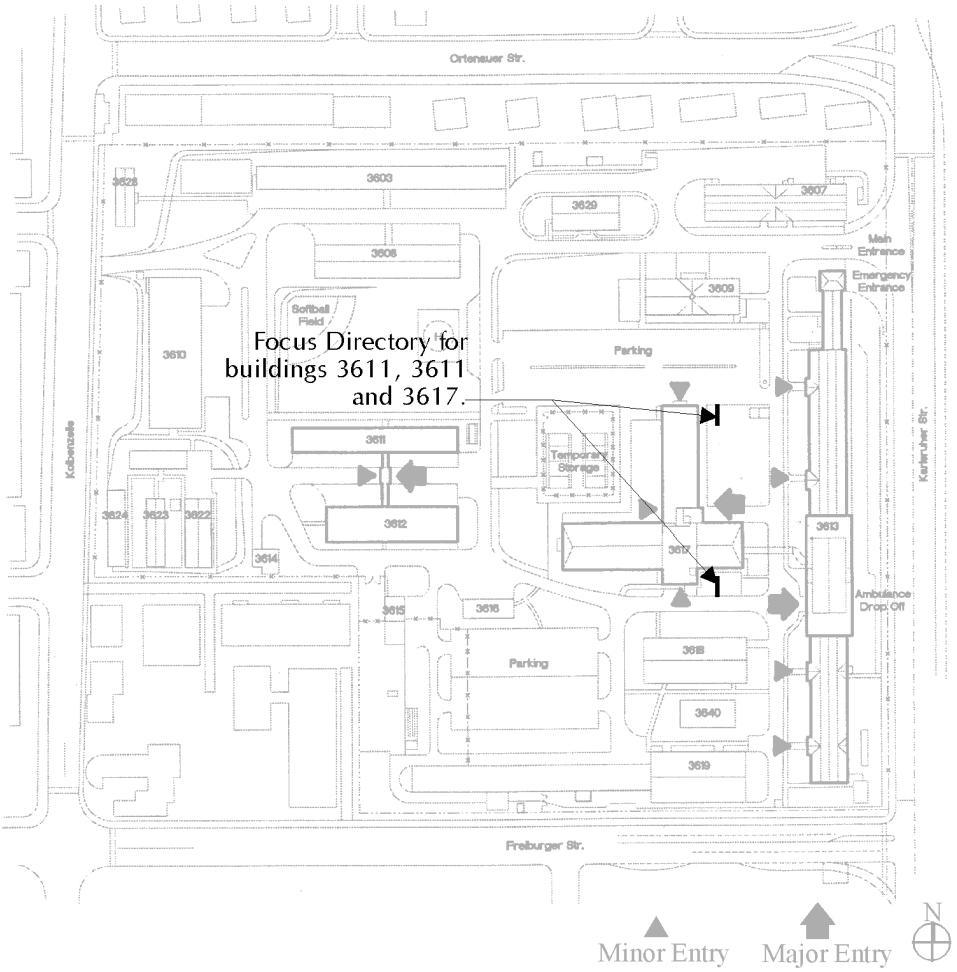

Fig. 6 Heidelberg Hospital, Site Plan; showing primary entries to hospital buildings, and suggested location of local focus directories.

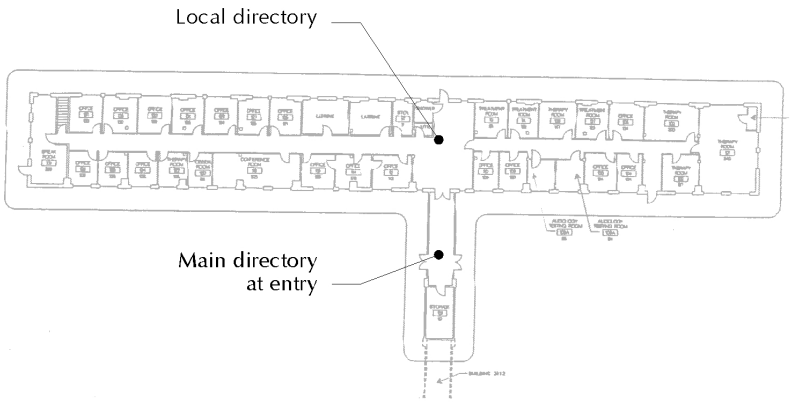

Fig. 7 Heidelberg Hospital, Entry Floor Plan of Building 3613; showing typical location of primary signage elements.

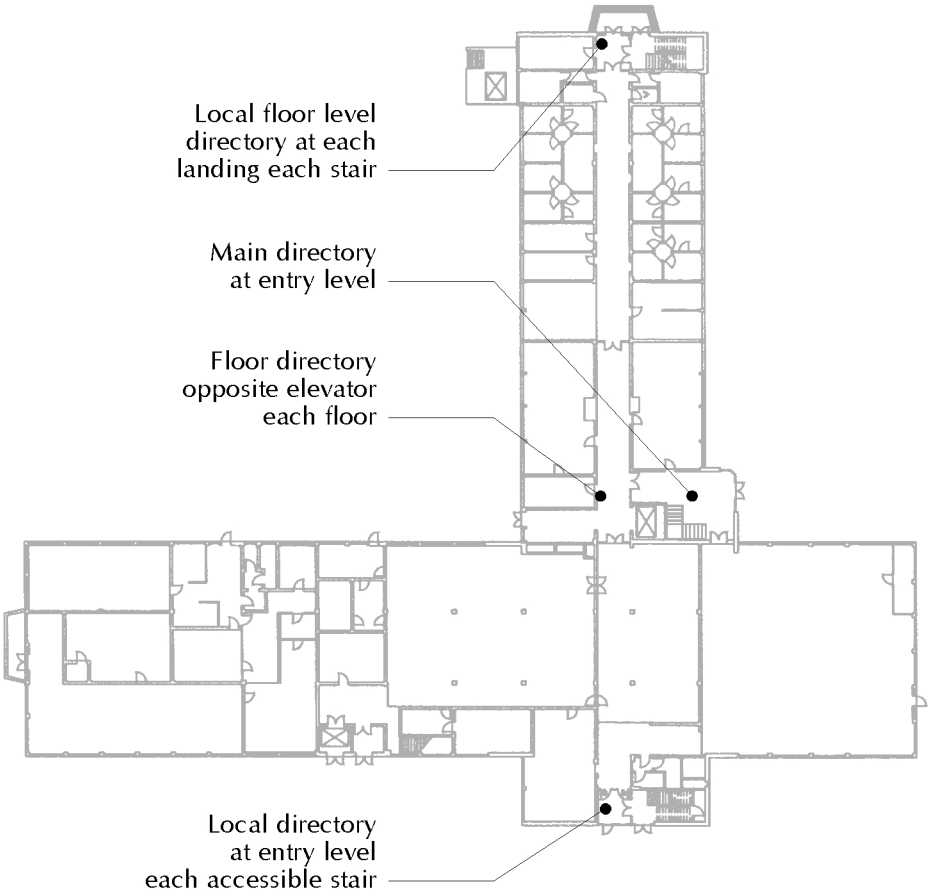

Fig. 8 Heidelberg Hospital, Entry Floor Plan of Building 3617; showing typical location of primary signage elements.

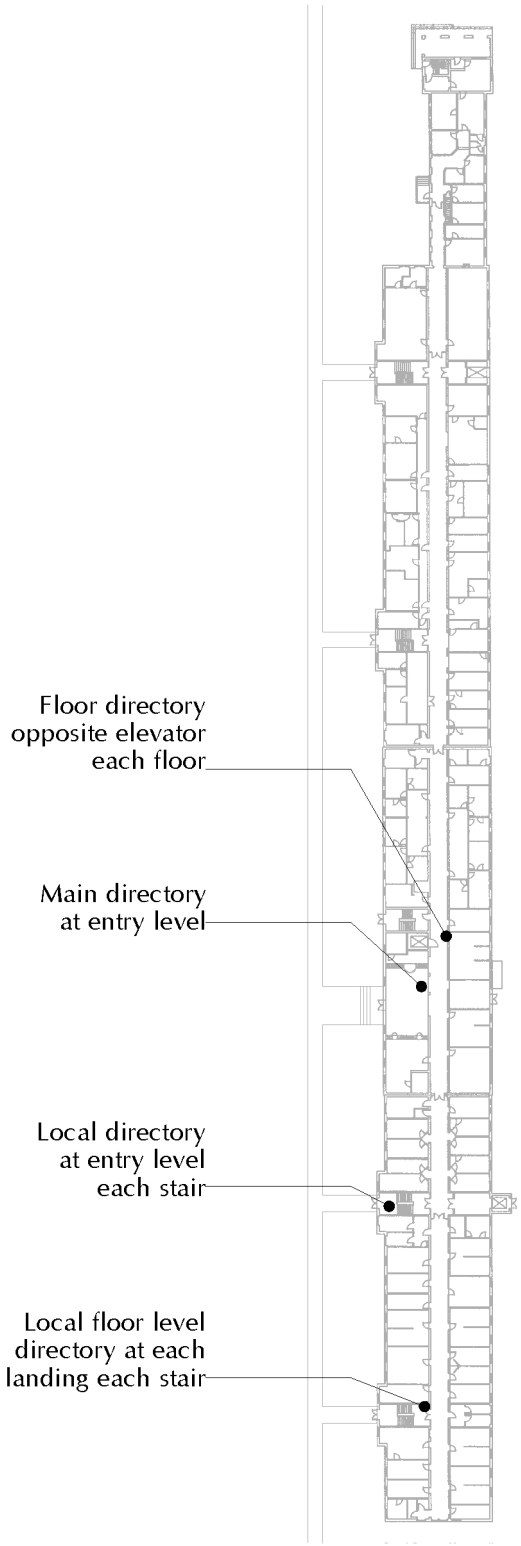

Fig. 9 Heidelberg Hospital, Entry Floor Plan of Building 3611; showing typical location of primary signage elements.

LANDSTUHL

Landstuhl Hospital offers considerable challenge in establishing a clear wayfinding system. The main hospital facility consists of some 20 two-story buildings which are linked by a single circulation spine, with several additional (typically administrative) detached buildings (Fig. 15). There were, at the time of the visit, more than 70 operating entrances. Adding to the hospital's complexity is a series of internal ramps, some of which lead to another floor, while others simply go from one building to the next—the same floor but at a different level. Currently, the hospital is mostly monochromatic, which adds to the anonymity of any given space. There are a few areas which have begun to use color, but its use seems to be in response to the monotony of the whole, as opposed to an effort to help in orienting visitors to the complex. All buildings are numbered on the exterior in typical Army fashion; however, the main hospital core has also incorporated an independent system, with buildings numbered 1-20.

Fig. 10 Ramped Connection Corridor

Fig. 11 Building 15 Entry – Out-Patient Between Buildings

Building 1 is primary and ambulatory care, and effectively operates as a clinic. Building 15 holds out-patient records. There is limited parking near the records entry, and the parking that is nearby is usually full. Building 20, a newer three-story structure with an internal racetrack circulation route, is the primary in-patient facility. It houses birthing/nursery, surgical wards, and emergency needs. Most of the other buildings linked by the main circulation spine house one or more departmental functions.

Existing Signage and Wayfinding Conditions

Wayfinding difficulties at Landstuhl begin upon entering the base at Gate 2, which at the time of the visit was the main entry into the complex. The primary circulation route, Munson Circle, forms a belt around the core of the hospital complex, but signage and directional information along the route is small and unclear. The entrance to Building 20 is oriented toward Gate 1 and is signed "Main Entry." In reality, out-patient records may be said to be the main entry into the hospital, as visitors currently need to pick up their records before proceeding to their appointment, and the indicated "Main Entry" is intended for emergency room use only, and not ambulatory patients.

Fig. 12 Building 20 Emergency room

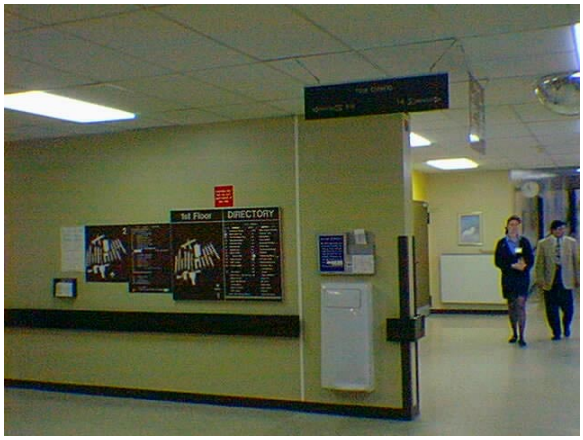

Fig. 13 Signage at "Four Corners"

Landstuhl Hospital currently uses a landmark referred to as "Four Corners" as its primary orientation reference. At the intersection of the major north/south and east/west corridors, Four Corners is centrally located, and heavily traveled. Reinforcing its importance within the wayfinding landscape, Four Corners is the location of the primary directory (Fig. 16), and is, at times, staffed by volunteers who can give further assistance to visitors.

Another feature unique to Landstuhl Hospital is the use of map cards, available at several locations throughout the facility. The map cards show, in a compact format, the various floors and primary service areas of the hospital.

Most of the existing signage at Landstuhl is fairly new, but falls short of the standards proposed in ECE Phase I, and does not meet current ADA requirements for gloss, tactile presentation, or location. Existing signage is engraved and, therefore, fixed, although an in-house sign shop can quickly prepare signs as required.

Recommendations

The Facilities Management Department has already taken a major step toward an improved wayfinding system by implementing a plan to reduce the number of public entries from 72 to 5, and by providing secured parking for staff in order to free up visitor parking around those designated public entrances. To reinforce this initial step, simple and clear exterior signage should be put in place, directing users from the gates to the appropriate parking areas.

Each of the five major entries should further be signed so that they are clearly identified from the exterior—visible from the parking lot, if possible, and scaled appropriately. Initial orientation information points should then be located just inside each the five major entries (ST1). These should contain abbreviated information similar to that on the map cards—primary occupancies by wing, with added emphasis on the local quadrant.

The existing Four Corners concept should be strengthened by placing a major information kiosk at that location. Incorporate a color code for the interior of each of the four quadrants that is exaggerated for clarity at Four Corners. A corresponding color bar (ST8c) could be added to the new signage to strengthen wayfinding until the overall color system is established. Use reinforcing signage throughout the facility to refer users back to Four Corners.

In addition to a color coding system for the four major quadrants of the hospital, a secondary coding system—a graphic symbol—should be incorporated into the wayfinding system to indicate floor level, and cue individuals as to destination of ramps (floor or level change). This could be a very simple element, such as that shown in Figure 14.

Secondary information points should be established along the two major corridors (that create Four Corners) at alternate points between intersections with perpendicular departmental wings. This signage, preferably ceiling hung (ST3), should reinforce one's location within the building (perhaps by reference to Four Corners) as well as list adjacent departments.

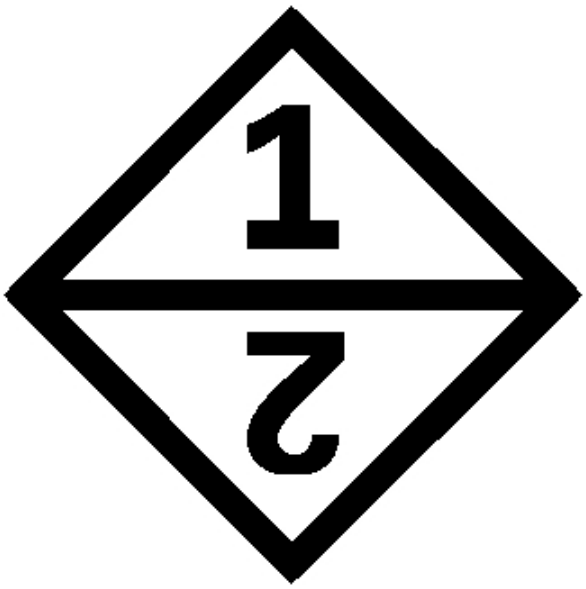

Fig. 14 Level indicator to be embedded in floor on ramps. The upright number indicates the level being approached.

Stairways play a secondary role at Landstuhl Hospital, but they should still be provided with a wing/floor level indicator and local directory at each landing (ST4). Elevators also (particularly the public elevator of Building 20) should be provided with a level indicator and local directory at each floor.

Individual wings should be identified by primary identification signage (ST4) and similarly suites within wings by secondary identification signage (ST5). Room signage should follow guidelines established in ECE Phase I, as outlined in Chapter 5 - Signage.

An electronic kiosk which allows interactive location of one's destination would be beneficial in addition to the elements indicated. A single unit located at Four Corners would suffice. Additional information on this type of device is provided in the Chapter 5 - Signage.

The map card currently in use is also a valuable tool, and a version of it with color-coding to match the facility would provide tremendous benefit. If the cost of reproduction is a concern, the installation of deposit boxes for used cards might help keep duplication costs down.

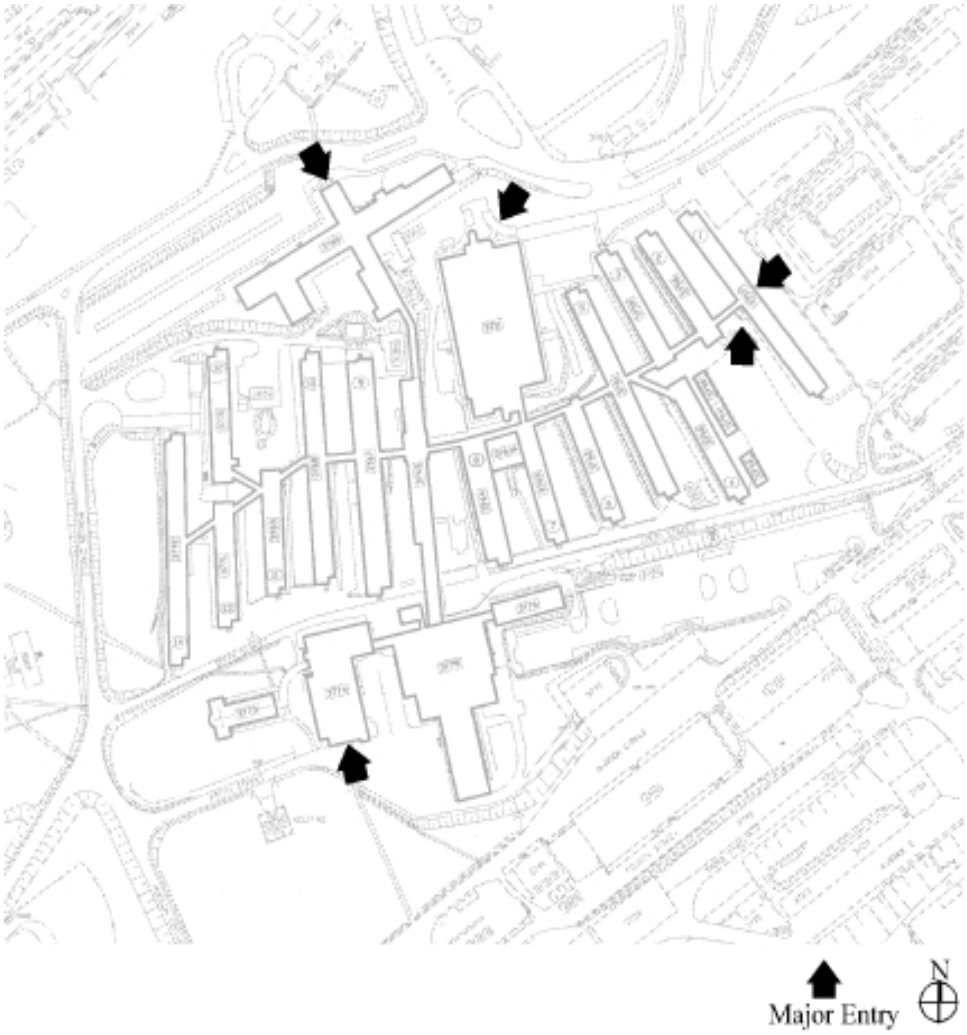

Fig. 15 Landstuhl Hospital Site Plan; showing five designated primary entrances.

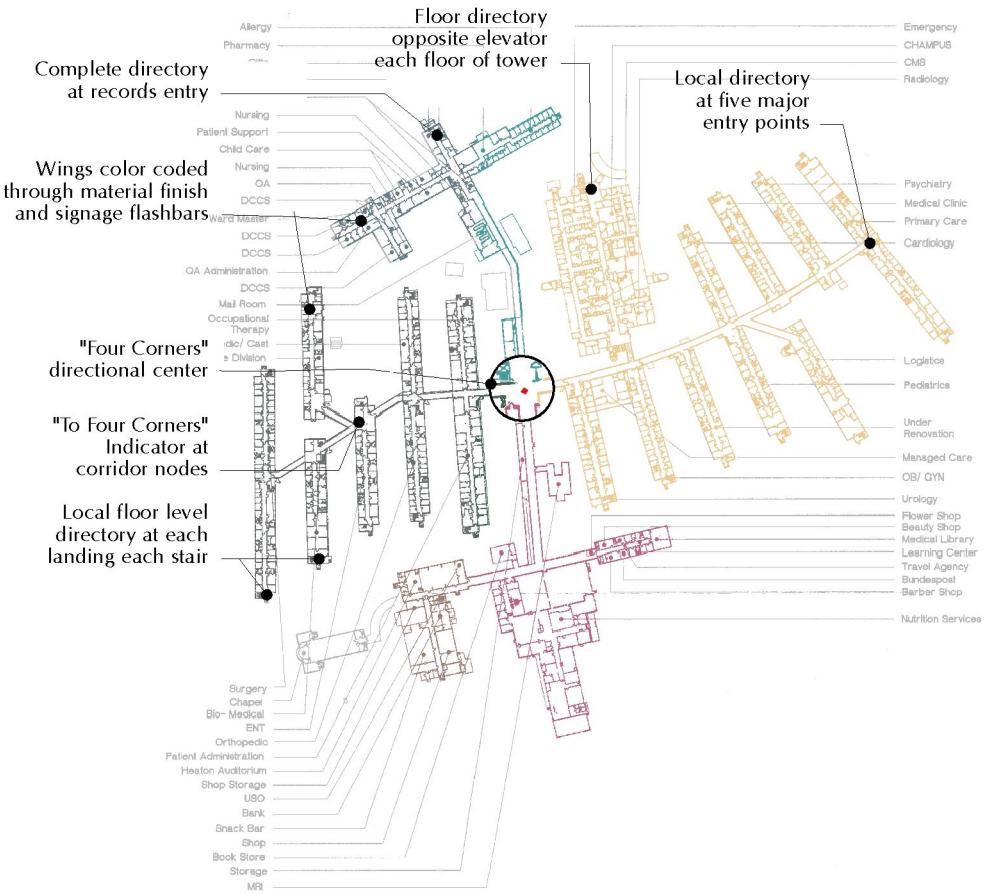

Fig. 16 Landstuhl Hospital, Entry Floor Plan; showing location of four corners, typical location of primary signage elements, and suggested differentiation by color.

Wuerzburg

The U.S. Army Hospital Base, Wuerzburg, consists primarily of two buildings. Building 345 is an older, linear, four-story building that sits prominently on a hill overlooking the city center. Building 352 is a relatively new, five-story building set in the curve of the back wall of Building 345 (Fig. 20). Since Building 352 sits further up the hill than Building 345, its ground level is linked to the second level of Building 345. The two buildings are connected by an elevator/stair link on three of the five floors of Building 352.

Fig. 17 Building 345

Building 352 houses the primary hospital functions including in-patient care, birthing/nursery, and surgical wards. Building 352 also handles all emergency needs. Building 345 houses various clinical functions, as well as administrative offices and facility support.

Existing Signage and Wayfinding Conditions

The current wayfinding and signage system at Wuerzburg has several shortcomings. Although the exterior of the hospital has a clear sense of main entry in Building 345, a strong central directional information point does not exist once a user is inside the building. Many users enter through the emergency entrance in Building 352 due to its proximity to American Personnel Housing and parking—this entry also lacks a comprehensive information point. In addition to these two primary entry points, there are numerous secondary entries which either serve clinic level functions, or are merely convenient to parking.

Both buildings currently share a color-by-level scheme put in place when Building 352 was constructed, but this has not yet been implemented completely throughout Building 345. A start has been made toward standardizing signage throughout the facility, but the current signage system falls short of the standards in ECE Phase I in terms of flexibility and ADA compliance.

Fig. 18 Color Coding of Wainscoting and Floor

Fig. 19 Main Entry

Recommendations

A major information/directional kiosk (ST1) should be located at the intersection of the main circulation spine of Building 345 and the link to Building 352, directly visible as users enter through the main entry doors of Building 345 (Fig. 19). This primary information point should define the entire hospital complex. A similar information point should be located directly inside the emergency entrance to Building 352.

Primary information points (ST1) should be established at the same intersection mentioned above on subsequent floors (Fig. 21). Although not necessarily in kiosk form, these information points should state what functions are located on that floor and, where appropriate, accessibility to Building 352. Areas that can not be reached directly from these points should be indicated with a phrase such as "Return to third floor, take south elevator to fifth floor new tower."

Secondary directories (ST2) should be located adjacent to elevator lobbies (Fig. 21). These should include departmental signage and reinforce one's location along the lengthy curvilinear circulation corridor. The signage should be perpendicular to the user's movement, and mounted overhead—either hung from the ceiling or attached to the wall as flag. Local secondary directories (ST2) should also be located at minor entry lobbies and landings of all stairs (Fig. 21).

Wings and wards that are distinct from the main corridor should be identified as such with primary identification signs (ST4). Suites should be similarly marked with secondary identifiers (ST5). Room signage should be placed in standardized locations next to doors as proposed in Chapter 5 - Signage. Further clarity in wayfinding can be achieved by incorporating a color bar (ST8c) into the new signage that would coordinate with the color-by-floor scheme already in use by the hospital.

An electronic kiosk that allows interactive location of one's destination would be beneficial in addition to the elements indicated. Ideally, two units would be provided, one in the main entry of Building 345 and the other in the emergency entrance of Building 352. Additional information on this type of device is provided in the Chapter 5 - Signage.

A map card similar to that currently in use at Landstuhl would be a low-cost alternative to an electronic kiosk, and a version of it with color-coding to match the facility would provide considerable benefit. If the cost of reproduction is a concern, the installation of deposit boxes for used cards might help keep duplication costs down.

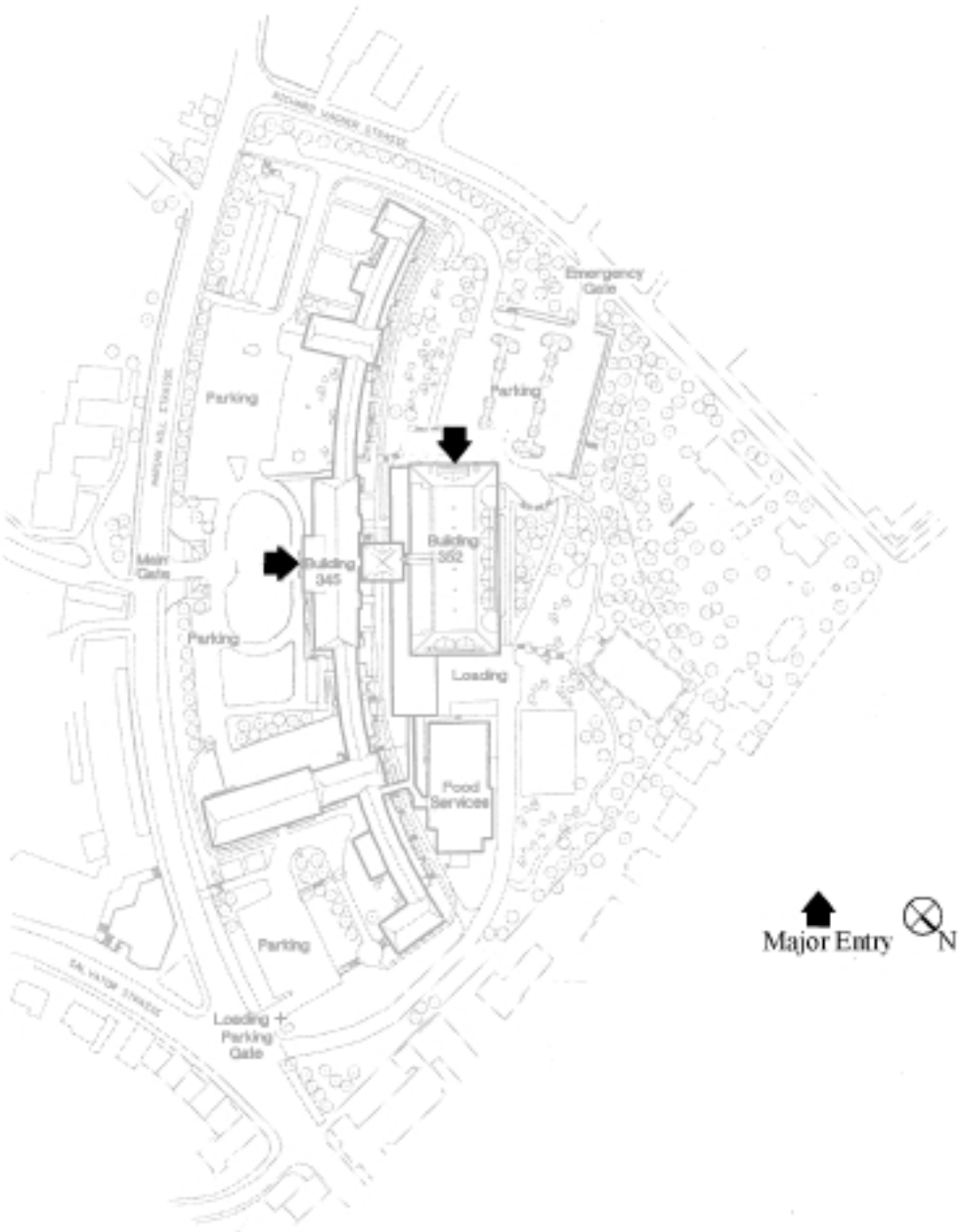

Fig. 20 Wuerzburg Hospital, Entry Floor Plan of Building 3617; showing typical location of primary signage elements.

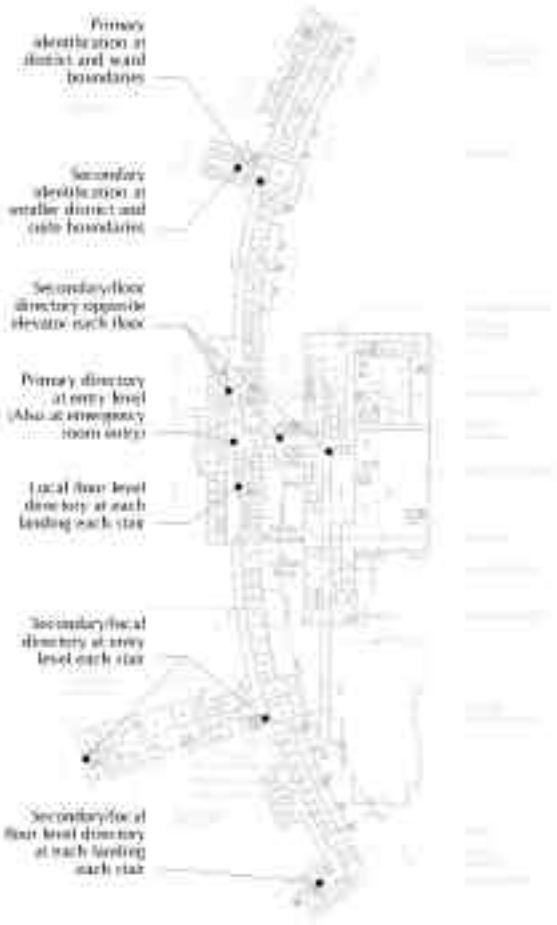

Fig. 21 Wuerzburg Hospital, Entry Floor plan of Buildings 345 and 352; showing typical location of primary signage elements